

### PRELIMINARY SPEC

Part Number: AA3528RWC/Z

WHITE



**ATTENTION**  
OBSERVE PRECAUTIONS  
FOR HANDLING  
ELECTROSTATIC  
DISCHARGE  
SENSITIVE  
DEVICES

### Features

- SINGLE COLOR.
- SUITABLE FOR ALL SMT ASSEMBLY AND SOLDER PROCESS.
- AVAILABLE ON TAPE AND REEL.
- IDEAL FOR BACKLIGHTING.
- PACKAGE : 1500PCS / REEL.
- MOISTURE SENSITIVITY LEVEL : LEVEL 4.
- ELECTROSTATIC DISCHARGE THRESHOLD (HBM):400V.
- TYP. COLOR TEMPERATURE:6500K
- COLOR COORDINATES:X=0.33,Y=0.34 ACC. TO CIE1931(WHITE).
- OPTICAL EFFICIENCY: 43.1 lm/W(TYP.)
- COLOR REPRODUCTION INDEX:80
- RoHS COMPLIANT.

### Description

The source color devices are made with InGaN Light Emitting Diode.

Static electricity and surge damage the LEDs.

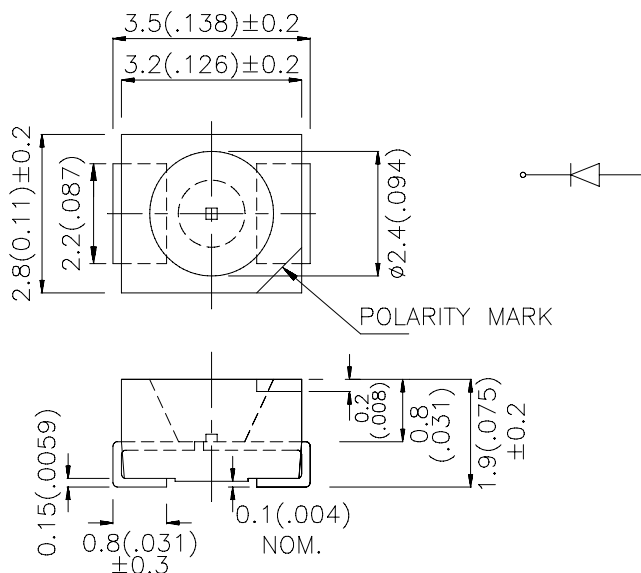
It is recommended to use a wrist band or anti-electrostatic glove when handling the LEDs.

All devices, equipment and machinery must be electrically grounded.

### Applications

- traffic signaling.
- backlighting (illuminated advertising , general lighting).
- interior and exterior automotive lighting.
- substitution of micro incandescent lamps.
- reading lamps.
- signal and symbol luminaire for orientation.
- marker lights (e.g. steps, exit ways, etc).
- decorative and entertainment lighting.
- indoor and outdoor commercial and residential architectural lighting.

### Package Dimensions



#### Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is  $\pm 0.25(0.01)$  unless otherwise noted.
3. Specifications are subject to change without notice.

## Selection Guide

Part No.	Dice	Lens Type	Luminous Intensity <sup>Note2</sup> Iv(mcd) @ 20 mA		$\Phi_v$ (mIm) <sup>Note3</sup> @ 20 mA	Viewing Angle <sup>Note1</sup>
			Min.	Typ.	Typ.	2 $\theta$ 1/2
AA3528RWC/Z	WHITE (InGaN)	WATER CLEAR	480	1000	2760	120°

## Absolute Maximum Ratings at T<sub>A</sub>=25°C

Parameter	Symbol	Value	Unit
Power dissipation	P <sub>t</sub>	111	mW
Reverse Voltage	V <sub>R</sub>	5	V
Junction temperature	T <sub>J</sub>	110	°C
Operating Temperature	T <sub>op</sub>	-40 To +85	°C
Storage Temperature	T <sub>stg</sub>	-40 To +100	°C
DC Forward Current	I <sub>F</sub>	30	mA
Peak Forward Current <sup>Note4</sup>	I <sub>FM</sub>	100	mA
Thermal resistance Junction/ambient <sup>Note5</sup>	R <sub>th JA</sub>	250	°C/W
Junction/solder point	R <sub>th JS</sub>	110	°C/W

### Notes:

1. $\theta$ 1/2 is the angle from optical centerline where the luminous intensity is 1/2 the optical centerline value.
- 2.Luminous intensity is measured by a current pulse of 10ms at a tolerance of  $\pm$ 15%.
- 3.The typical data of Luminous Flux can only reflect statistical figures, actual parameters of individual product could differ from the typical data. For the purpose of product enhancement, the typical data is subject to change without prior notice.
- 4.1/10 Duty Cycle, 0.1ms Pulse Width.
- 5.R<sub>th</sub>(J-A) Results from mounting on PC board FR4 (pad size $\geq$ 16 mm<sup>2</sup> per pad),

## Electrical / Optical Characteristics at T<sub>A</sub>=25°C

Parameter	Symbol	Value	Unit
Chromaticity coordinate x acc.to CIE1931 I <sub>F</sub> =20mA [Typ.]	X <sup>Note1</sup>	0.33	-
Chromaticity coordinate y acc.to CIE1931 I <sub>F</sub> =20mA [Typ.]	Y <sup>Note1</sup>	0.34	-
Forward Voltage I <sub>F</sub> =20mA [Min.]	V <sub>F</sub> <sup>Note2</sup>	2.7	V
Forward Voltage I <sub>F</sub> =20mA [Typ.]		3.2	
Forward Voltage I <sub>F</sub> =20mA [Max.]		3.7	
Reverse Current (V <sub>R</sub> =5V) [Typ.]	I <sub>R</sub>	0.01	$\mu$ A
Reverse Current (V <sub>R</sub> =5V) [Max.]		10	
Temperature coefficient of x I <sub>F</sub> =20mA, -10°C $\leq$ T $\leq$ 100°C [Typ.]	TC <sub>x</sub>	-0.1	10 <sup>-3</sup> /°C
Temperature coefficient of y I <sub>F</sub> =20mA, -10°C $\leq$ T $\leq$ 100°C [Typ.]	TC <sub>y</sub>	-0.2	10 <sup>-3</sup> /°C
Temperature coefficient of V <sub>F</sub> I <sub>F</sub> =20mA, -10°C $\leq$ T $\leq$ 100°C [Typ.]	TC <sub>v</sub>	-2.5	mV/°C

### Notes:

- 1.Chromaticity coordinates are measured by a current pulse of 20ms with a tolerance of  $\pm$ 0.01 in X and Y color coordinates.
- 2.Forward voltage is measured with a current pulse of 10ms at a tolerance of  $\pm$ 0.1V.

## Brightness codes

Code.	luminous Intensity <sup>Note1</sup> Iv(mcd) @ 20 mA		$\Phi_v$ (mlm) <sup>Note2</sup> @ 20 mA
	Min.	Max.	Typ.
S	480	750	2400
T	650	1100	2650
U	900	1500	3000
V	1200	1800	3300

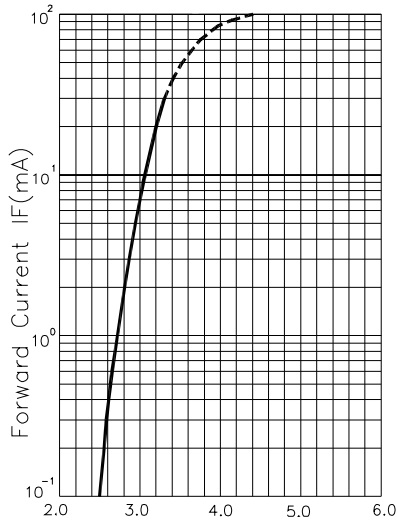
Notes:

1. Luminous intensity is measured by a current pulse of 10ms at a tolerance of  $\pm 15\%$ .

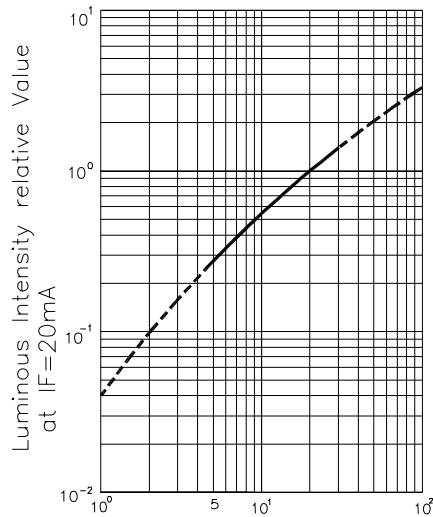
2. The typical data of Luminous Flux can only reflect statistical figures, actual parameters of individual product could differ from the typical data. For the purpose of product enhancement, the typical data is subject to change without prior notice.

## White

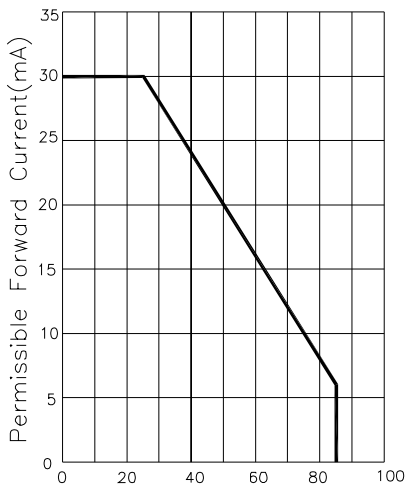
### AA3528RWC/Z



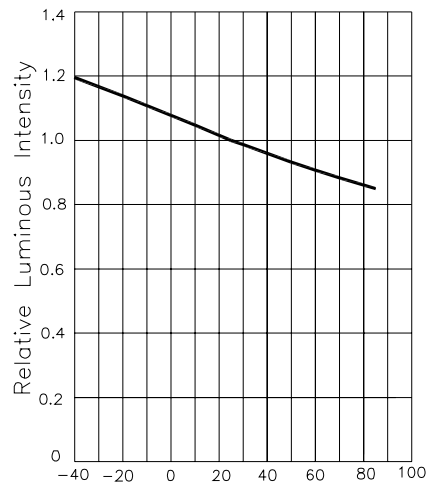
Forward voltage (V)  
FORWARD CURRENT Vs.  
FORWARD VOLTAGE



Forward current (mA)  
LUMINOUS INTENSITY vs.  
FORWARD CURRENT

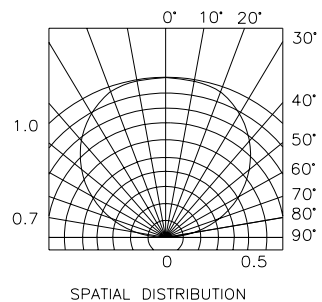
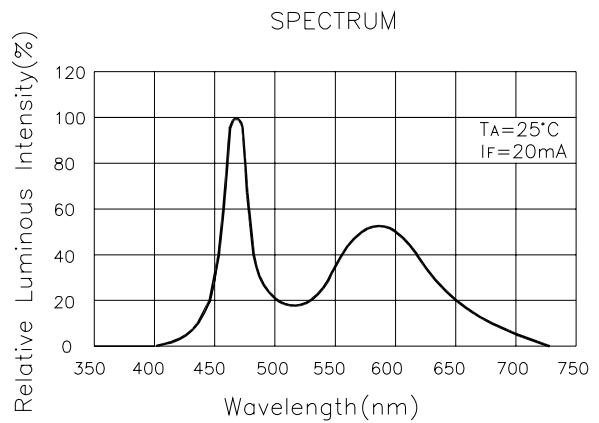
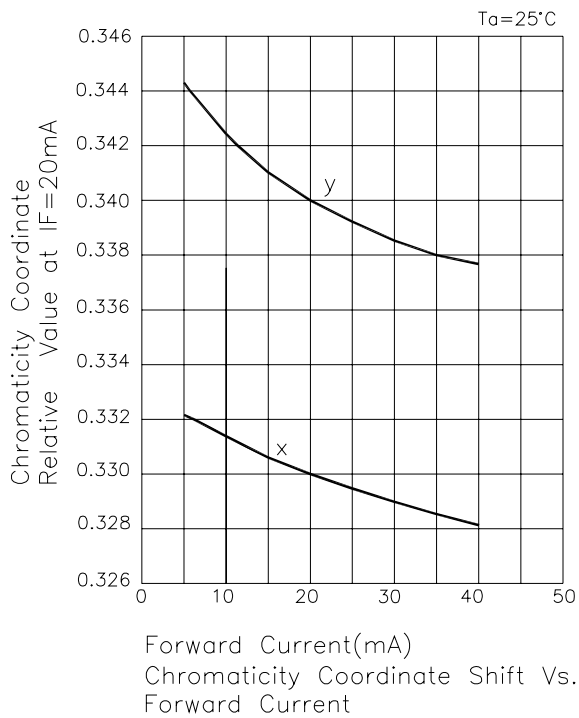
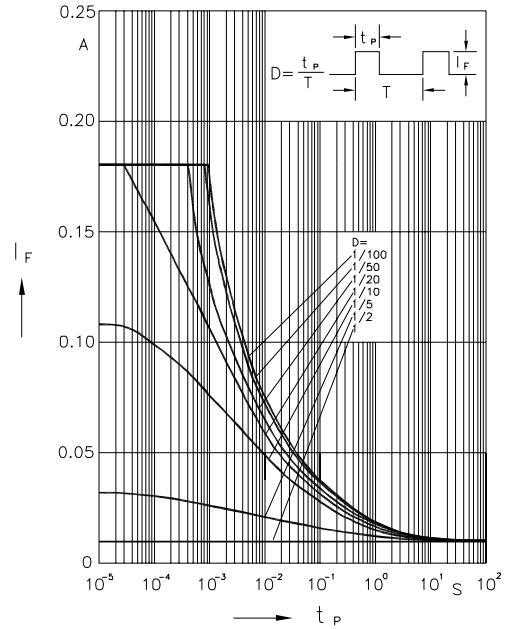
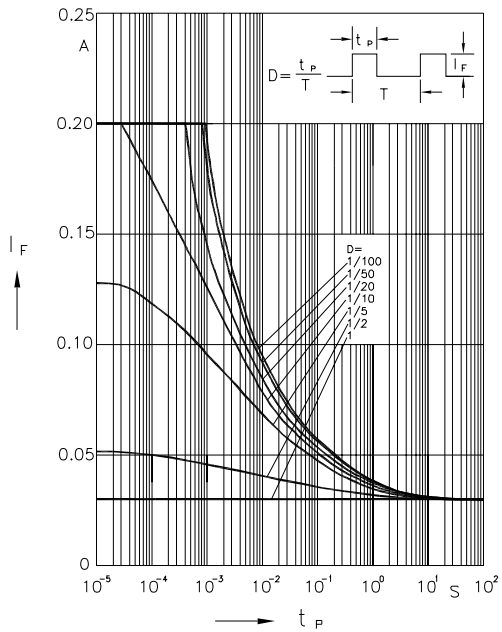


Ambient Temperature  $T_A$ (°C)  
FORWARD CURRENT  
DERATING CURVE

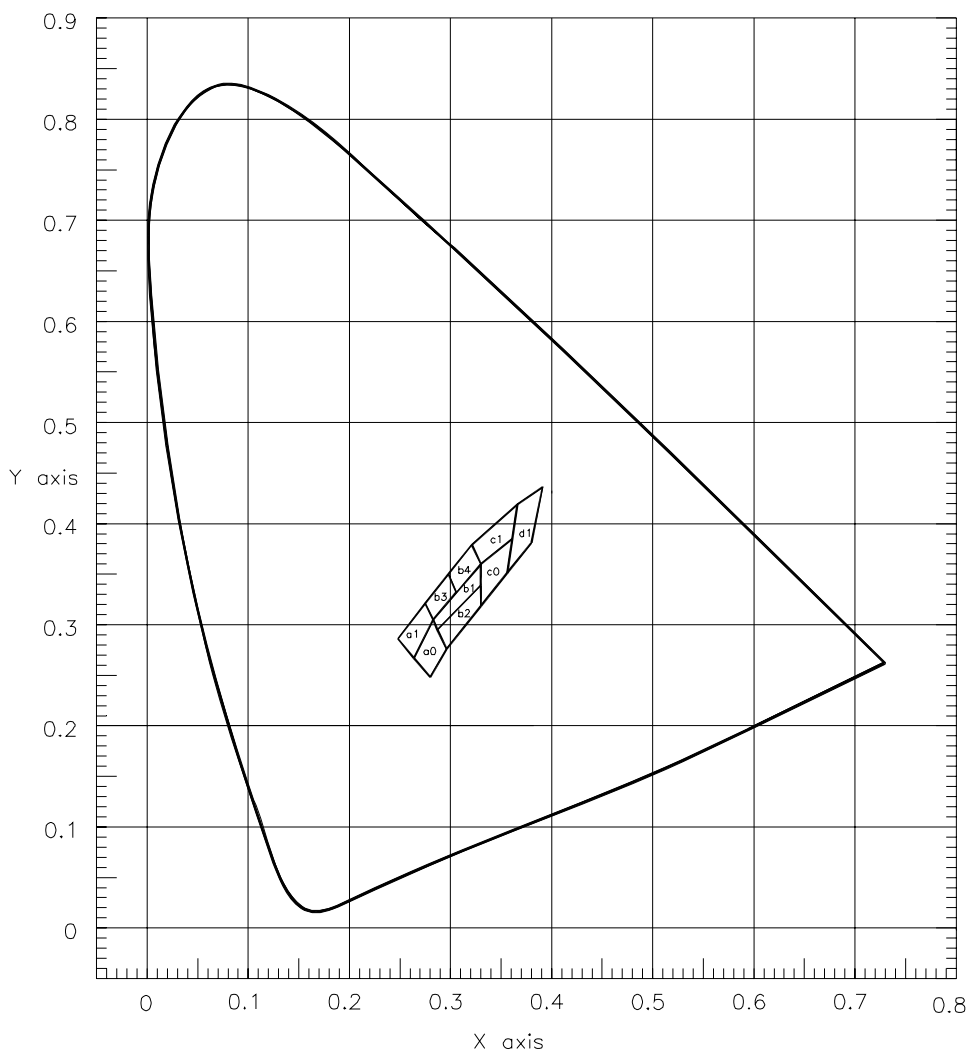


Ambient Temperature  $T_A$ (°C)  
LUMINOUS INTENSITY vs.  
AMBIENT TEMPERATURE

## AA3528RWC/Z



## Color Codes



a1				
X	0.248	0.275	0.283	0.264
Y	0.286	0.321	0.305	0.267
b1				
X	0.283	0.330	0.330	0.287
Y	0.305	0.360	0.339	0.295
c1				
X	0.321	0.366	0.361	0.330
Y	0.379	0.419	0.385	0.360

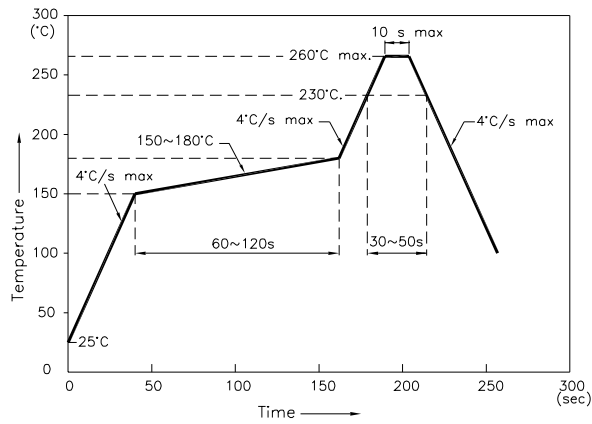
a0				
X	0.264	0.283	0.296	0.280
Y	0.267	0.305	0.276	0.248
b2				
X	0.287	0.330	0.330	0.296
Y	0.295	0.339	0.318	0.276
c0				
X	0.330	0.361	0.356	0.330
Y	0.360	0.385	0.351	0.318

b3				
X	0.275	0.298	0.306	0.283
Y	0.321	0.350	0.332	0.305
b4				
X	0.298	0.321	0.330	0.306
Y	0.350	0.379	0.360	0.332
d1				
X	0.366	0.391	0.380	0.356
Y	0.419	0.436	0.381	0.351

Ta=25°, IF=20mA Measurement Uncertainty of the Color Coordinates: +/-0.01

## AA3528RWC/Z

Reflow Soldering Profile For Lead-free SMT Process.



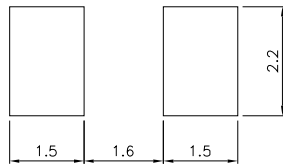
**NOTES:**

1. We recommend the reflow temperature 245°C(+/-5°C). The maximum soldering temperature should be limited to 260°C.
2. Don't cause stress to the epoxy resin while it is exposed to high temperature.
3. Number of reflow process shall be 2 times or less.

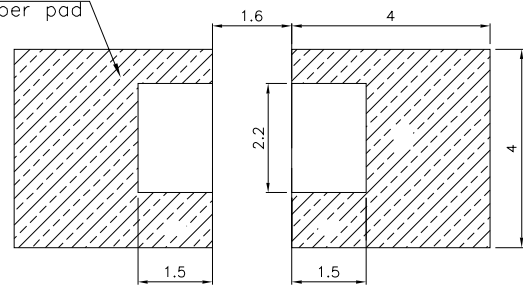
### Recommended Soldering Pattern

(Units : mm ; Tolerance: ± 0.1)

Pad design for improved heat dissipation



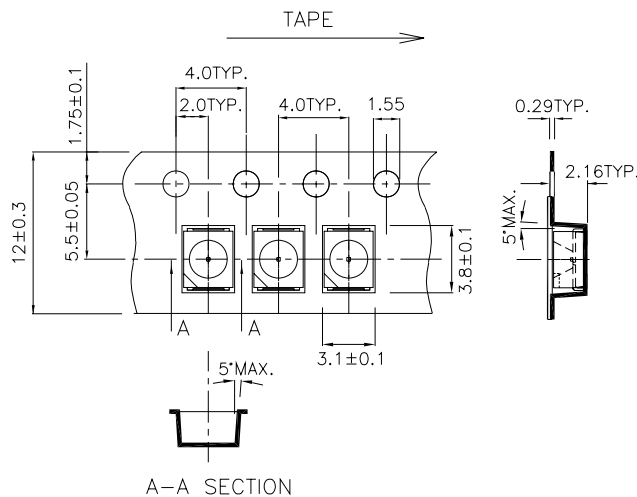
Cu-area ≥ 16mm<sup>2</sup>  
per pad



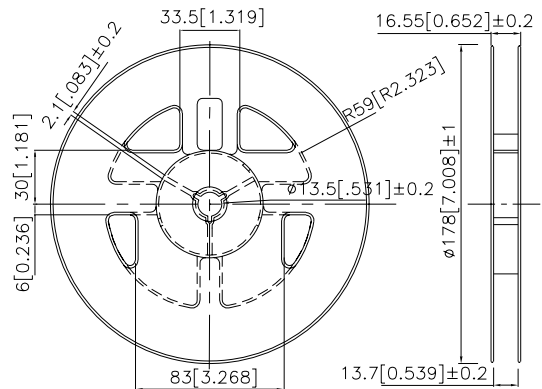
▨ Solder resist

### Tape Specifications

(Units : mm)

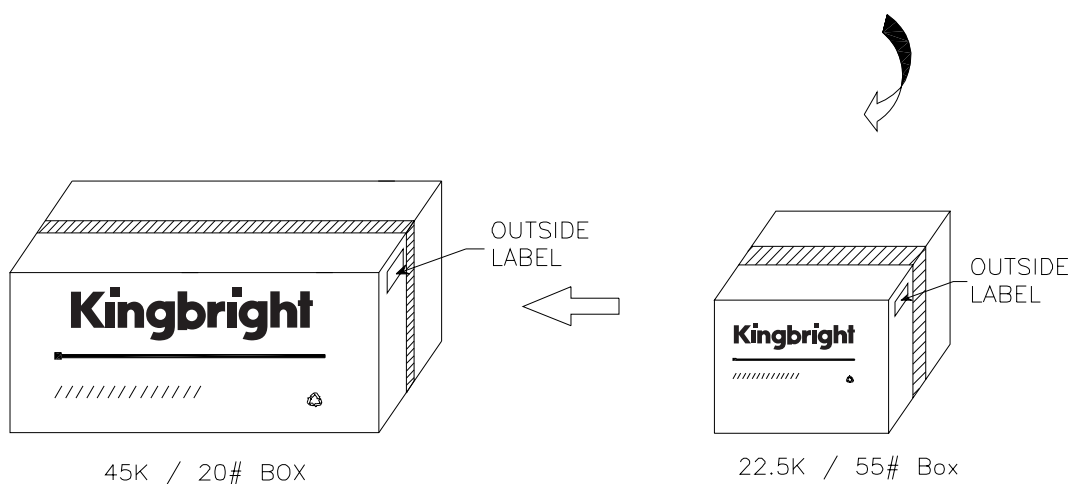
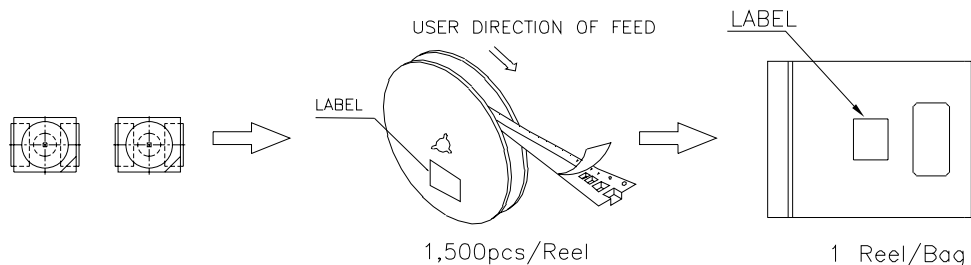



### Reel Dimension



## PACKING & LABEL SPECIFICATIONS

AA3528RWC/Z



<b>Kingbright</b>	
P/NO: AA3528XXX	
QTY: 1,500 pcs	Q.C. <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">xx xx. xxxx</span>
S/N: XXXX	PASSED <span style="font-size: small;">Date</span>
CODE: XXX	
LOT NO:	
 <small>xxxxxxxxxxxxxxxxxxxxxxxx</small>	
RoHS Compliant	